

we recommend a storage battery and primary cells, or, if the alternating current from the street mains is available, a transformer may be used.

Price, complete set, including two cells, storage battery, set of primary battery, and cautery set, described on page 23 . . . . . \$44.00

Transformer, for use on 104 or 52 volt, alternating current . . . . . 20.00

### ELECTRIC HAND LAMP.

For the physician and others, a pocket electric searchlight. Handy in every case where a powerful light of short duration is needed. This lamp is operated by three cells of dry battery, and will last a long time. When the cells become exhausted a new charge should be inserted.

Price, \$3.00. Charges, 30 Cents.

By Mail, \$3.30. By Mail, 50 Cents.

Larger size, batteries guaranteed for ten hours' use, \$3.50.

By Mail, \$4.00.

### BOOKS.

Monell's Manual of Static Electricity in X-Ray and Therapeutical Uses . . . . .	\$6.00
Morton on the X-Ray. Paper, 50 cents; cloth . . . . .	.75
Meadowcraft. A B C of the X-Ray. Cloth . . . . .	.75
Atkinson's Static Electricity . . . . .	1.50
Removal of Superfluous Hair and Other Blemishes by Electricity . . . . .	1.00
Haynes' Elementary Principles of Electro-Therapeutics . . . . .	1.50

The Barta Press, Boston.

# Bulletin No. 24.



## Static Machines, X-Ray Supplies,

AND

## Electro-Therapeutical Apparatus.



Manufactured by

### SWETT & LEWIS CO.,

79 Franklin Street, Formerly 11 Bromfield Street,  
BOSTON, MASS.

## GREETING.

We wish to thank our customers for their cordial support of the last three years. On our part we have striven to warrant this patronage by improving our apparatus every way in our power.

In March last, we purchased the business and good-will of the American Roentgen Ray Co., and in our new machines we will incorporate the best features of their machines together with the tried and proven parts of our own, making our modern outfit the culmination of years of practice and experiment.

The manufacturing department of our business has been placed in the hands of Mr. Howard Jackson, a well-known electrical engineer, and all goods are made under the direct personal supervision of our manager, Frank H. Swett, M. E.

We have added to our line of static and X-ray apparatus a full line of galvanic and faradic batteries, light sets, and everything in electro-medical equipment and supplies.

SWETT & LEWIS CO.,

Successors to

G. A. FRIE & CO., and AMERICAN ROENTGEN RAY CO.

July 7 1901

## TO PURCHASERS.

Terms cash.

The prices in this catalogue are *net*, subject to change without notice.

Five (5) per cent. discount will be allowed when cash accompanies the order. Goods will be sent C. O. D. when at least 20 per cent. of the entire amount of invoice accompanies order. Return charges are at expense of purchaser.

Remittances should be made by New York bank draft, express or postal order.

Goods will be delivered F. O. B., freight or express, Boston, Mass.

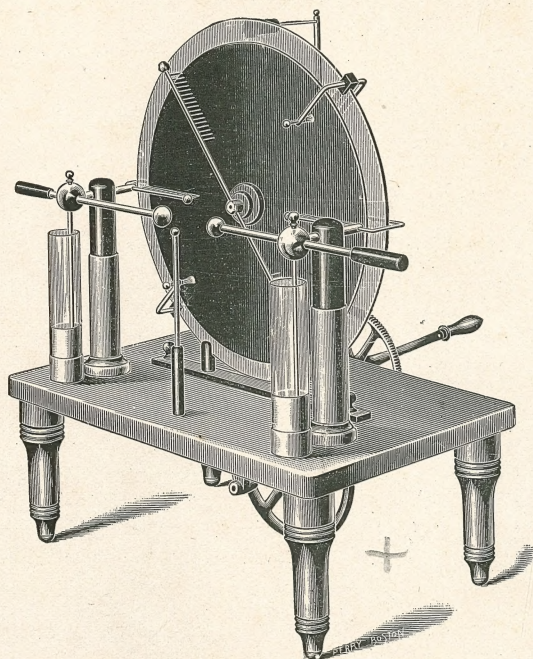
No charge is made for packing.

Each piece of apparatus is carefully packed, and no allowance will be made for breakage in transit.

Immediate shipment guaranteed.

## STATIC MACHINES.

The cabinet work on our machines may be either mahogany or oak, and is designed for strength and neatness. Every machine, unless especially ordered to the contrary, is provided with a case of wood



and glass which insulates the generating parts from the outside atmosphere. Access to the working parts is obtained through doors in each end of the case. To prevent electrical leakage all the metal and conducting parts are firmly fixed on hard rubber supports. The driving gear is so arranged that the operator may easily run the

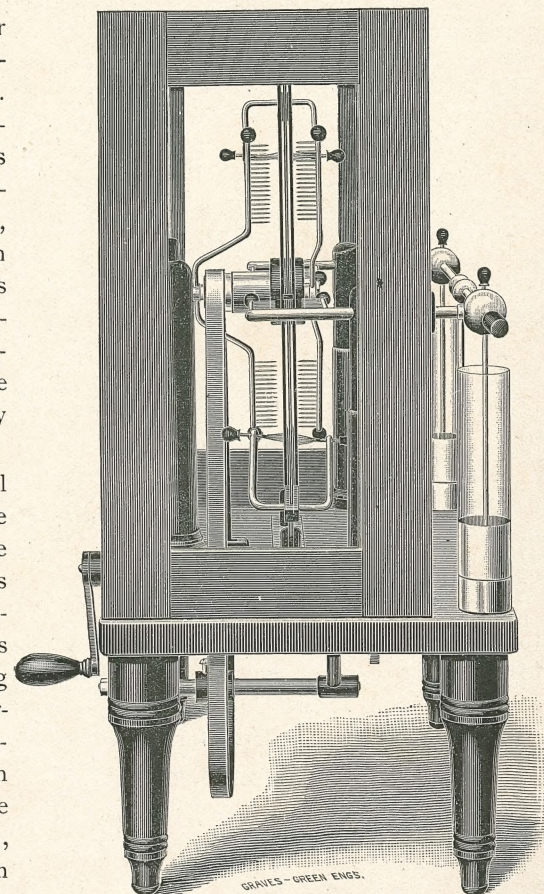
machine at its required speed of from 1,500 to 2,000 revolutions per minute. If desired, a special pulley for a motor will be attached without extra charge. The bearings are self-adjusting and self-lubricating and require no attention. For convenience of manipulation the discharge rods are placed on the outside of the case.

Our No. 1 machine has one stationary glass plate and one revolving rubber plate, will give a 4 or 5 inch spark, and is built for

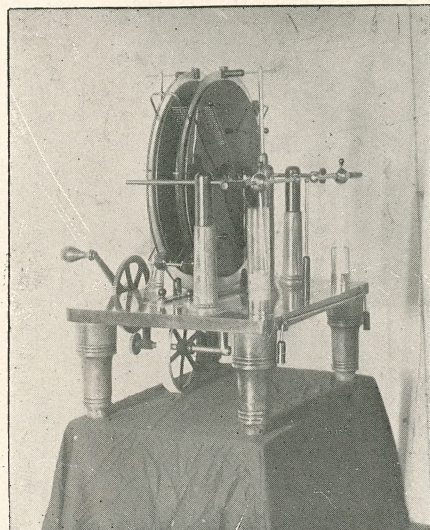
school and experimental work. It will show the bones of the hand or arm with the fluoroscope.

The No. 2 machine is especially adapted to the needs of the physician in general practice for X-ray and therapeutical work. It has two stationary glass plates and two revolving rubber plates, and will give an 8 inch continuous spark. It is useful in light therapeutical and the smaller X-ray work.

No. 2 Special is of the same capacity as the preceding, but is built more substantially, and is adapted to long continuous service of the hardest nature. In essentials, it is the same as No. 2, with the addition of an extra support for bearings, giving greater rigidity, special brushes, clips for Leyden jars and short-circuiting rods.



Our No. 3 machine has four stationary glass and four revolving rubber plates, will give an 8 inch spark of twice the volume of the No. 2, and is built for physicians and hospitals desiring a neat, compact, and powerful X-ray and therapeutical outfit. This machine has been growing in favor with the medical profession



during the past year, as is attested by the numerous unsolicited testimonials which we have received. It may be run by hand, or, if preferred, from any source of power.

At present we are building a new line of static machines which will shortly be placed upon the market. They will embody all the latest improvements, including pole-changer, *air-tight* case, anti-friction, self-adjusting, oilless bearings, and belt-tightening device, all so arranged

that in the operation of the machine it will never be necessary to open the case or expose the working parts to the outside atmosphere. A special supplement devoted to these machines will be issued shortly. Write for it.

#### NET PRICE LIST.

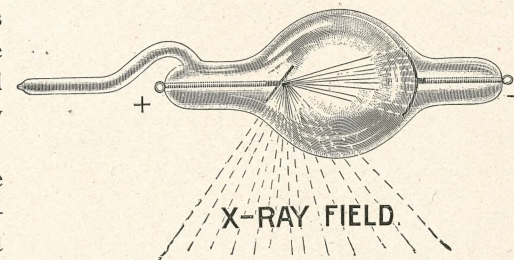
No. 1 . . . . .	\$30.00
„ 2 . . . . .	45.00
„ 2 Special . . . . .	60.00
„ 3 . . . . .	95.00
„ 3 (with pole-changer) . . . . .	100.00

For prices of complete outfits see page 11.

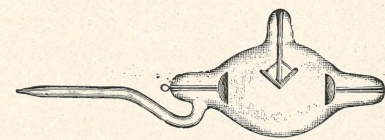
## TUBES.

We feel justly proud of the way our tubes have stood the hard and exacting tests to which they have been submitted in the past few years.

Too much care cannot be exercised in fitting a tube to a special machine. We make tubes for all kinds and sizes of generators and



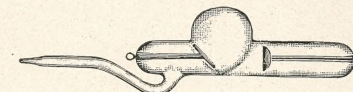
S Tube.



T Tube.

carry in stock all the ordinary styles. In placing an order for a tube, it is absolutely necessary to specify the kind of machine and the spark length upon which it is to be run in

order that you may receive a tube of the correct style and vacuum. If you have any special idea that you wish embodied in a tube, send us the specifications and we will make it for you.



B Tube.

#### PRICE LIST.

Type S, for small static machines . . . . .	\$ 5.00
„ W, „ medium „ „ . . . . .	6.75
„ M, „ largest „ „ . . . . .	8.00
„ R, „ large coils . . . . .	7.50
„ B, „ coils 6 ins. or less . . . . .	5.00
„ T, „ Tesla coils . . . . .	7.50
„ T, „ large size, adjustable vacuum . . . . .	10.00

Type W may also be used for coils.

Vacuum regulator, \$2.00 extra. Repumping: S and B, \$1.00; W and T, \$1.50; M and R, \$2.00. Repairing at reasonable prices.

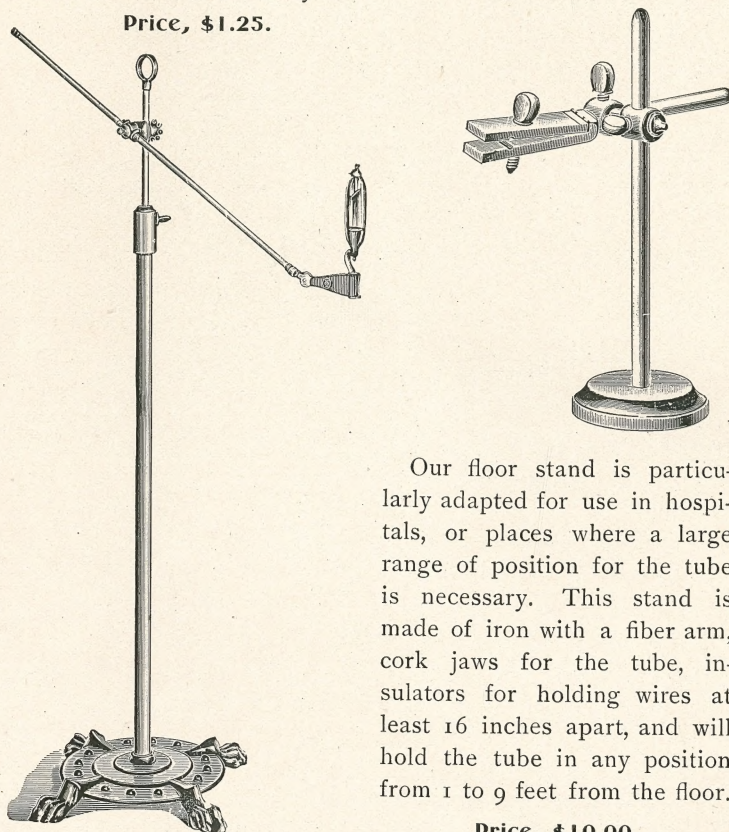
We make a specialty of repairing and repumping other makes of tubes. We will not hold ourselves responsible for the breaking

of tubes undergoing repairs. Our new special static tube is superior in definition, brilliancy, and life. Prices same as for regular S and W. When ordering, specify *Special S* or *Special W*.

### TUBE STANDS.

Our small tube stands are made of highly polished maple, cork jaws, triple swing, giving any possible angle, and are weighted with lead to hold the tube steady.

Price, \$1.25.



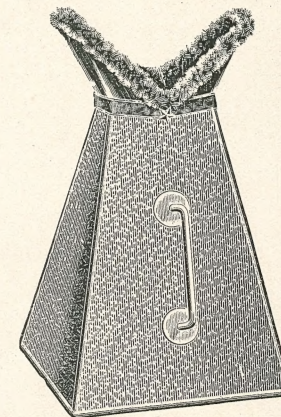
Our floor stand is particularly adapted for use in hospitals, or places where a large range of position for the tube is necessary. This stand is made of iron with a fiber arm, cork jaws for the tube, insulators for holding wires at least 16 inches apart, and will hold the tube in any position from 1 to 9 feet from the floor.

Price, \$10.00.

### FLUOROSCOPES.

There are two different kinds of fluoroscopes, the tungstate of calcium and the platinum barium cyanide. The advantages of the tungstate are its long life and comparatively low price. Our tungstate screens are made from the best crystals obtainable, in a thorough and workmanlike manner, and are unsurpassed.

Our barium screens are manufactured by a new process, which insures a much longer life for them than heretofore, and are a triumph of brilliancy, definition, and wearing quality. The barium screen is fully 75 per cent. clearer than the tungstate, and the increased cost will be money well spent to any one who uses the X-ray any appreciable amount.



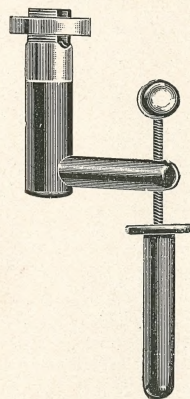
### PRICE LIST.

Calcium Tungstate.		Platinum Barium Cyanide.	
4 x 5 . . . . .	\$5.00	4 x 5 . . . . .	\$8.00
5 x 5 . . . . .	6.00	5 x 5 . . . . .	10.00
5 x 7 . . . . .	9.00	5 x 7 . . . . .	12.50
6 x 6 . . . . .	9.00	6 x 6 . . . . .	13.00
6 x 8 . . . . .	11.00	6 x 8 . . . . .	16.00
8 x 10 . . . . .	16.00	8 x 10 . . . . .	24.00

Unmounted tungstate calcium screens, 15 cents per square inch.

## SPARK GAPS.

It is an established fact that for X-ray work a double spark gap, *i. e.*, a gap at each pole, is very much better than the old method of a single gap. To make this feasible, we manufacture these spark gaps.



They are made of brass and rubber, so arranged that they may be clamped to the discharge rods, and the length of gap regulated by a screw. These, or the pole-changer with double gap listed below, should be used on all static machines intended for X-ray work.

Price, \$3.00 per pair.

## POLE-CHANGER.

By request of a number of our friends, we have designed a combined *pole-changer and double spark gap*. This may be attached to any static machine in five minutes' time with only the aid of a screwdriver.

By its use the tube may be instantly reversed without disturbing the spark-gap adjustment or connections. This appliance is neat in appearance, simple, and positive in action. In ordering state size, style, and finish of the machine it is to be used on.

Price, \$3.00.

Pole-changers for machines of other makes made to order. Price on application.

## SAMPLE OUTFITS.

### Outfit A.

One No. 2 machine, including case . . . . .	\$45.00
„ tube, type S . . . . .	5.00
„ extra tube, type S . . . . .	5.00
„ tube stand . . . . .	1.25
„ tungstate of calcium fluoroscope, 6 x 6 . . . . .	9.00
	<hr/>
	\$65.25

### Outfit E.

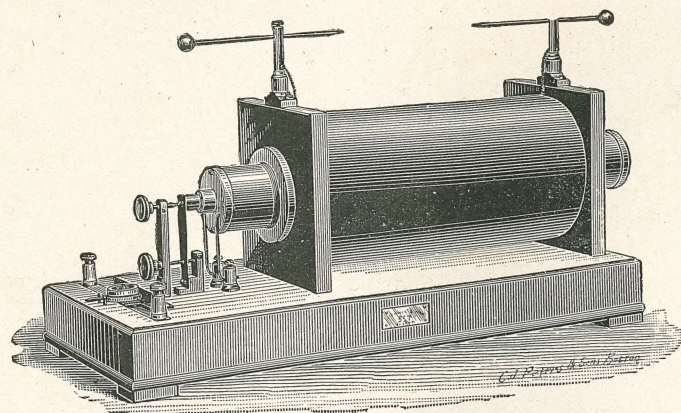
#### For experimental and school work.

One No. 1 machine . . . . .	\$30.00
„ tube, type S . . . . .	5.00
„ tube stand . . . . .	1.25
„ fluoroscope, 5 x 5 . . . . .	6.00
	<hr/>
	\$42.25

### Outfit G.

One No. 3 machine, including case and pole-changer . . . . .	\$100.00
„ tube, type S, with adjustable vacuum . . . . .	7.00
„ „ „ S . . . . .	5.00
„ „ stand . . . . .	1.25
„ tungstate of calcium fluoroscope, 6 x 8 . . . . .	11.00
	<hr/>
	\$124.25

We recommend the addition of a pole-changer or a pair of spark gaps to each of the above outfits. Price: pole-changer, \$8.00; spark gaps \$3.00.

**Outfit D.**

We would advise this outfit where from lack of room or other local reasons a static machine could not be used.

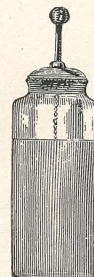
One 8 in. Ruhmkorff coil . . . . .	\$115.00
„ tube, type W . . . . .	6 75
„ „ „ R . . . . .	7.50
„ „ stand . . . . .	1.25
„ fluoroscope, 6 x 8 . . . . .	11.00
Four cells storage battery, 100 ampere-hours . . . . .	50.00
	<hr/> \$191.50

Prices on other sizes of coils and special catalogue on application. These coils are made expressly for us by one of the oldest coil makers in the country, and we do not hesitate to warrant them the best thing obtainable in the coil line.

Platinum fluoroscopes may be substituted for tungstate in any of the above outfits for difference in price. See page 9 for prices.

## EXTRA PARTS.

Glass plates, each . . . . .	\$2.00
Rubber plates, each (subject to change with market price of rubber) . . . . .	3.50
Leyden jars, each . . . . .	.35
Wooden covers for Leyden jars, per pair . . . . .	.50
Brass rod used to short-circuit machine so that connection to the tube may be changed while the machine is generating . . . . .	1.00
Fused chloride of calcium, per lb. . . . .	.40
„ „ „ „ 10 lb. can . . . . .	1.50
Pulley for attaching motor . . . . .	1.00
Special stretched rawhide belts, each . . . . .	.50
Belt needle, with waxed ends . . . . .	.10
Brushes, each . . . . .	.15
Cords with special hook tips for connecting tubes to machine, 5 foot, 50 cents; 10 foot . . . . .	.75



When ordering parts, give serial number, which you will find on base of machine, behind gear wheel, and also on door of machine.

We make a specialty of furnishing parts of static machines and apparatus to experimenters or others who wish to build for themselves. Prices on application.

## MOTORS.

Having so many inquiries for motors to run our machines, we list below the different styles and sizes in common use.

$\frac{1}{6}$ horse-power motor, 110 volt direct current for No. 2 machine . . . . .	\$25.00
$\frac{1}{6}$ horse-power motor, 104 or 52 volt alternating for No. 2 machine . . . . .	60.00
$\frac{1}{4}$ horse-power motor, 110 volt direct for No. 3 machine . . . . .	55.00
$\frac{1}{4}$ horse-power motor, 104 or 52 volt alternating for No. 3 machine . . . . .	90.00
$\frac{1}{4}$ horse-power 500 volt direct current for No. 3 machine . . . . .	60.00
Water motor for No. 2 machine, pressure of 80 lbs. to square inch, or over . . . . .	15.00
Water motor for No. 2 machine, pressure under 80 lbs. to square inch . . . . .	22.50
Water motor for No. 3 machine, pressure of 80 lbs. or over per square inch . . . . .	22.50

In ordering motors, if electric, state voltage of the current, and if alternating, the frequency of alternations; if water motors, the water pressure per square inch and size of your supply pipe.

## CARBUTT PLATES FOR X-RAY WORK.

These plates are individually wrapped in light-proof wrappers so that they may be used under the X-rays without any further preparation.

Size.	Per Dozen.	Size.	Per Dozen.
5 x 7	\$1.30	11 x 14	\$ 6.00
6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	2.00	14 x 17	11.65
8 x 10	2 90		
10 x 12	4.50		

## DEVELOPING AND PRINTING OUTFIT.

Two 8 x 10 developing trays . . . . .	\$2.20
One 8 x 10 printing frame . . . . .	.75
„ 3 oz. bottle rodinal . . . . .	.60
„ red lantern . . . . .	1.00
„ pound hypo. . . . .	.10
	<u>\$4.65</u>

Complete outfit with full instructions for use shipped immediately on receipt of order.

## FLUOROMETER.

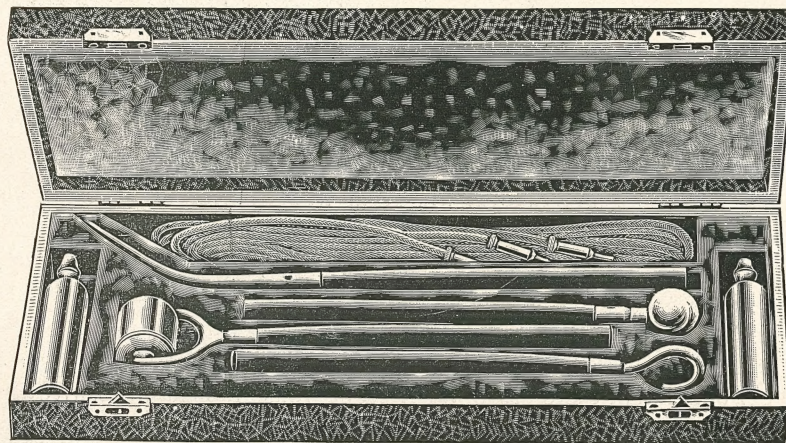
For use in hospitals, or in other places, where a very large number of accident cases are brought to be radiographed, a positive means of locating foreign substances is a great help both as to time and results. Such an apparatus is the Dennis fluorometer. Fuller details and special catalogue of this valuable adjunct to X-ray work on application.

Price, \$150.00.

## STATIC ELECTRODES.

Crown . . . . .	\$2.50
Point . . . . .	1.00
Insulating handle . . . . .	.50
Ball . . . . .	1.00
Roller . . . . .	1.50

Morton interrupting handle . . . . .	\$5.00
Insulating stool . . . . .	6.00
Floor stand, with ball, crown, and point, complete . .	10.00
Static cords, per pair . . . . .	.60



The above case contains one pair static cords with handles, one point, one roller, one insulating hook, and one ball, in plush-lined leather case.

**Price, \$6.50.**

### OZONE INHALER.

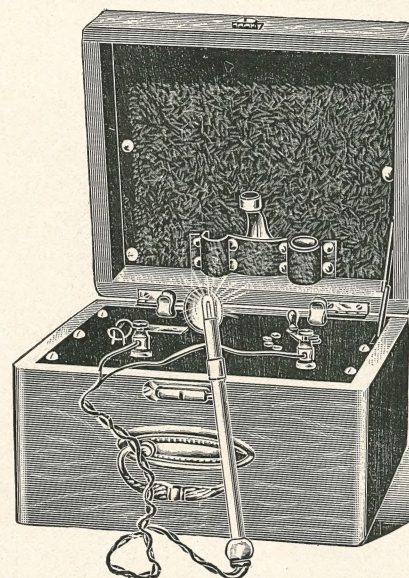
The therapeutic value of ozone is coming to be more and more generally recognized by the medical fraternity. To meet this want we make a neat appliance which may be used on any static machine. It consists of a glass bulb, with the proper terminals enclosed, firmly arranged on a polished turned wooden base.

**Price, \$6.00.**

### PORTABLE LIGHT SET.

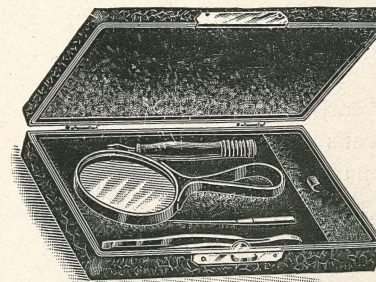
Recognizing the value to the physician of some little instrument for illuminating the interior parts, we have designed and built a neat and portable light set. The lamp used is of two candle power. Three silver-plated reflectors are furnished. The electricity is generated by three dry cells and the current is controlled by a simple rheostat. The case is finished in mahogany, all metal parts nickel plated and fitted with a neat drop handle and catch.

**Price complete, \$15.00.**



### EPILATION SET.

Having had many calls for a serviceable outfit that will permanently remove superfluous hair, we have designed and placed on the market a neat, compact, and thoroughly reliable set for that purpose. Eight cells of dry battery put up in a highly polished quartered oak case, with switch, rheostat, binding posts, cords, and sponges. We use the latest improved dry



cells with this outfit as well as the preceding, because they combine the advantages of portability, freedom from odor, and cleanliness, together with large output. The epilation case contains six steel needles, two iridio-platinum needles, needle holder, magnifying glass, and forceps. The lamp and reflectors used in the light set, also a small cautery knife, may be used with this battery. With the addition of the proper needles, this set may be used for the removal of naevi, birth marks, etc. Ample provision is made in the box for carrying these accessories. Wet battery may be substituted without additional cost.

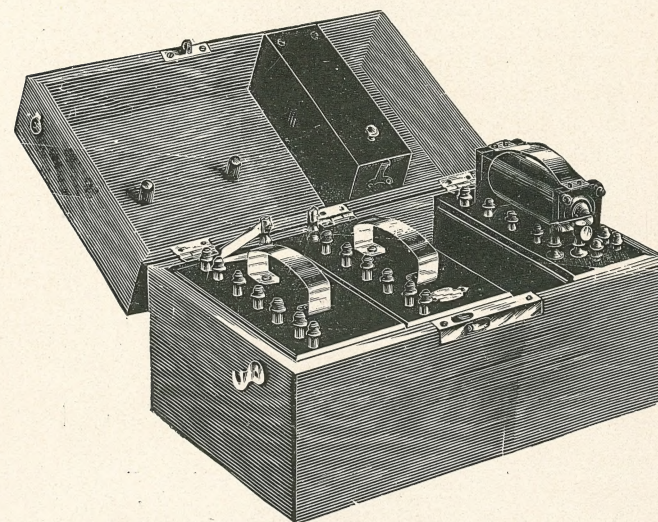
#### PRICE LIST.

Box, switchboard, battery, etc. . . . .	\$15.00
Epilation case . . . . .	3.25
Epilation set (complete) . . . . .	18.00
Needle case (naevi, birth marks, etc.) . . . . .	3.50
Small lamp with handle and reflector cord and socket . . . . .	3.75
Cautery knives, each . . . . .	.75
Lamp only . . . . .	.80
Replacing battery cells . . . . .	2.40
Cords (per pair) . . . . .	.50
Sponges (per pair) . . . . .	.75
Handles (per pair) . . . . .	.60
Complete outfit (box, epilation case, needle case, lamp, cautery knife, cords, and sponges) . . . . .	25.00

The cells used in this battery should last from six months to a year, according to use. When it is necessary to renew them, the cells can be procured and connected by the purchaser, or the box may be sent to us, express prepaid, and we will attend to it.

Prompt attention given to any special design of battery. Price quoted on receipt of specifications.

## WET CELL GALVANIC AND FARADIC BATTERIES.



6 cell galvanic . . . . .	\$12.00
12 cell galvanic . . . . .	18.00
12 cell galvanic and faradic . . . . .	24.00
18 cell galvanic . . . . .	24.00
18 cell galvanic and faradic . . . . .	30.00
Battery solution, per pint . . . . .	.25
Bichromate of potash, per pound . . . . .	.25

Repairing on all makes and sizes of galvanic or faradic goods on short notice and at reasonable prices.

## GALVANIC AND FARADIC CABINETS.

### NO. 1 CABINET.

This cabinet has room for 42 cells of sal-ammoniac battery, a switchboard containing cell selector, wire rheostat, adjustable rheotome for both galvanic and faradic currents, faradic coil with adjustable vibrator, pole-changer, milliamperemeter, binding posts, and necessary switches, together with drawers for electrodes.

Price, without cells, \$30.00.

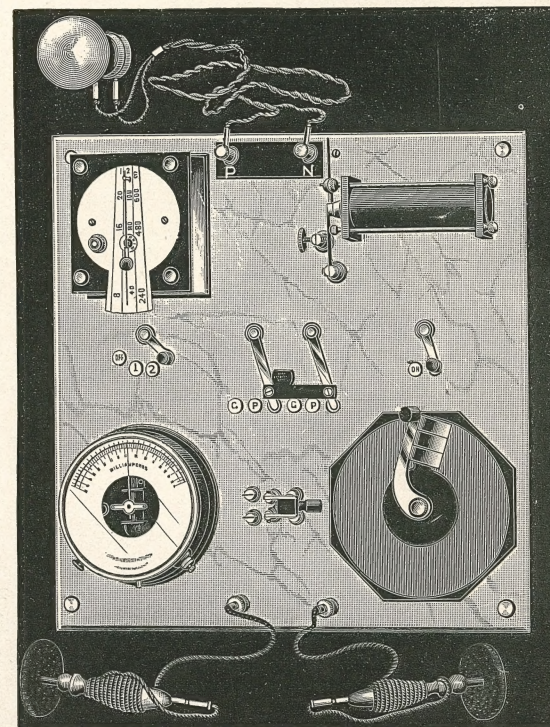
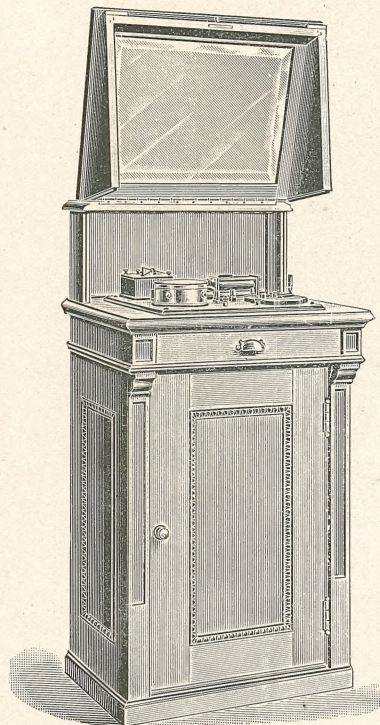
### NO. 6 CABINET.

Illustrated.

The No. 6 cabinet is arranged for either the 110 volt direct current taken from the street main, or for 40 cells of primary battery. The marble plate has on it a milliamperemeter, graphite rheostat, faradic coil, adjustable rheotome for either galvanic or faradic currents, pole-changer, and the necessary switches and binding posts.

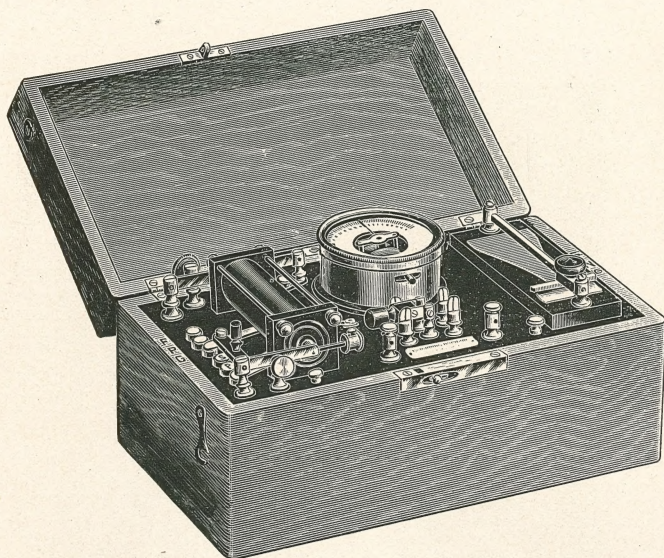
Price, without cells, \$93.00.

With 43 special Swett & Lewis cells, \$110.00.



No. 6 plate wired for 110 volt circuit.

Price, \$60.00.



In some cases a portable galvanic battery is a valuable adjunct to the physician's equipment. This 40 cell (dry) galvanic and faradic outfit is  $14\frac{1}{2}$  inches long,  $8\frac{1}{4}$  inches wide, and  $7\frac{1}{2}$  inches high, weighs 24 pounds, and is fitted with a special faradic coil having two vibrators, giving the fullest possible range of faradism, milliamperemeter, and graphite rheostat.

**Price, including cords, handles, and sponges, \$50.00.**

**Renewing cells, \$3.00.**

Prices and description of other styles and sizes of cabinets on application.

## GALVANIC AND FARADIC PARTS AND SUPPLIES.

We list below a few of the galvanic and faradic accessories which we carry in stock:

Milliamperemeter . . . . .	\$15.00
Milliamperemeter (galvanometer form) . . . . .	10.00
Graphite rheostat . . . . .	7.50
Graduated automatic rheotome (for either galvanic or faradic) . . . . .	12.00
Cautery set and knives (including handles and ecraseur loop) . . . . .	12.00
General electrode case . . . . .	9.00
Head lamp, aluminum parabolic reflector, with cords . . . . .	9.00
Cords (per pair) . . . . .	.75
Faradic batteries . . . . .	\$5.00, \$7.50, \$9.00, \$18.00

We can furnish at a few days' notice any style of electrode manufactured and at market prices.

## CELLS.

The best dry cells made at 40 cents apiece; lots of six or over, 35 cents apiece. The Swett & Lewis wet cell (for all open circuit work where long life and reliability are desired), 45 cents apiece; lots of six or over, 40 cents apiece.

Special wet cell (large zinc surface for use where large amperage is imperative), \$1.25 each; lots of six or over, \$1.10; lot of 40 or more, \$1.00 each.

For all portable batteries of any kind we would recommend the use of dry cells, as their light weight and freedom from leakage and odor make them superior for transportation. For office work the Swett & Lewis sal-ammoniac cell is more efficient. Special description of these cells on application. For large cautery work

we recommend a storage battery and primary cells, or, if the alternating current from the street mains is available, a transformer may be used.

Price, complete set, including two cells, storage battery, set of primary battery, and cautery set, described on page 23 . . . . . \$44.00  
Transformer, for use on 104 or 52 volt, alternating current . . . . . 20.00

### ELECTRIC HAND LAMP.

For the physician and others, a pocket electric searchlight. Handy in every case where a powerful light of short duration is needed. This lamp is operated by three cells of dry battery, and will last a long time. When the cells become exhausted a new charge should be inserted.

Price, \$3.00.

Charges, 30 Cents.

By Mail, \$3.30.

By Mail, 50 Cents.

Larger size, batteries guaranteed for ten hours' use, \$3.50.

By Mail, \$4.00.

### BOOKS.

Monell's Manual of Static Electricity in X-Ray and Therapeutical Uses . . . . . \$6.00  
Morton on the X-Ray. Paper, 50 cents; cloth . . . . . .75  
Meadowcraft. A B C of the X-Ray. Cloth . . . . . .75  
Atkinson's Static Electricity . . . . . 1.50  
Removal of Superfluous Hair and Other Blemishes by Electricity . . . . . 1.00  
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# Bulletin No. 24.



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